

### **CLAIMS**

**1.** An amplifier system (1) for satellites including:

- first and second amplifier modules ( $A_1$ ,  $A_2$ ) each having an input and an output,

- a signal divider (D) having an input, a first output, and a second output,

- a signal combiner (C) having a first input, a second input and an output,

said first output of said divider (D) being connected to said input of said first

amplifier module ( $A_1$ ) via a connection length  $Le_1$ , said second output of said

divider (D) being connected to said input of said second amplifier module ( $A_2$ )

via a connection length  $Le_2$ , said output of said first amplifier module ( $A_1$ ) being

connected to said first input of said combiner (C) via a connection length  $Ls_1$ ,

said output of said second amplifier module ( $A_2$ ) being connected to said second

input of said combiner (C) via a connection length  $Ls_2$ , and said connection

length satisfying the equation  $Le_1 + Ls_1 = Le_2 + Ls_2$ , which system is

characterized in that the connection length  $Ls_1$  is different from the connection length  $Ls_2$ .

**2.** An amplifier system (1) for satellites according to claim 1 characterized in that said length  $Le_1$  is equal to said length  $Ls_2$  and said length  $Le_2$  is equal to said length  $Ls_1$ .

**3.** An amplifier system (1) for satellites according to either claim 1 or claim 2 characterized in that at least one of said amplifier modules ( $A_1$ ,  $A_2$ ) is a traveling wave tube amplifier.

**4.** An amplifier system (1) for satellites according to claim 1 characterized in that at least one of said amplifier modules is a semiconductor SSPA.

**5.** An amplifier system (1) for satellites according to claim 1 characterized in that the connections between the outputs of said amplifier modules and the input of said combiner are waveguides.

**6.** An amplifier system (1) for satellites according to claim 1 characterized in that at least one of said amplifier modules (2) includes:

- first and second amplifier submodules ( $A_1$ ,  $A_2$ ) each having an input and an output,

- a signal divider (d) having an input, a first output, and a second output, and

- a signal combiner (c) having a first input, a second input, and an output,

said first output of said divider (d) being connected to said input of said first

- 5 amplifier submodule ( $A_1$ ) via a connection length  $Le_{11}$ ,  
 said second output of said divider (d) being connected to said input of said  
 second amplifier submodule ( $A_2$ ) via a connection length  $Le_{12}$ ,  
 said output of said first amplifier submodule ( $A_2$ ) being connected to said first  
 input of said combiner via a connection length  $Le_{11}$ ,  
 said output of said second amplifier submodule being connected to said second  
 input of said combiner via a connection length  $Le_{12}$ ,  
 said connection lengths satisfying the equation  $Le_{11} + Le_{11} = Le_{12} + Le_{12}$ , and the  
 connection length  $Le_{11}$  being different from the connection length  $Le_{12}$ .